

REMARKS

In the Office Action dated May 30, 2003, claims 1 and 2 were rejected under 35 U.S.C. §102(b) as being anticipated by Kuc et al. Claim 3 was rejected under 35 U.S.C. §103(a) as being unpatentable over Kuc et al. in view of Hayes et al.

These rejections are respectfully traversed for the following reasons.

The Kuc et al. reference discloses an apparatus for obtaining biomagnetic signals, from which a biomagnetic image of an organism is then generated. For generating this image, it is necessary to know the location and the magnitude of current sources (dipoles) within the organism. This is determined by modeling the electro-physiological activities of the organism, based on detection of extremely weak magnetic fields disposed outside of the organism. These extremely weak magnetic fields are measured or detected with devices known as SQUIDs (Superconducting Quantum Interference Devices). The location and magnitude of the dipole current sources are then reverse-calculated based on the magnetic field pattern.

The apparatus disclosed in the Kuc et al. reference is solely for the purpose of allowing a physician or technician to review or manipulate, such as by enlargement, the *already acquired* data representing the magnetic fields and the dipoles that have been reverse-calculated therefrom.

This is in contrast to the operation of a magnetic resonance imaging apparatus set forth in claim 1, wherein the method of claim 1 is for the purpose of selecting parameters that are used in the *acquisition* of the data. The method set forth in claim 1 of the present application is implemented before any data are acquired using the magnetic resonance apparatus, and is for the purpose of

providing a visual indication at a display as to how the selection or modification of one parameter in the data acquisition protocol will change another parameter in that protocol. By contrast, the apparatus and operating method disclosed in the Kuc et al. reference do not have any influence whatsoever as to the manner by which the data are acquired. The apparatus and method disclosed in the Kuc et al. reference are strictly for the purpose of post-processing data that have already been acquired, and have no influence whatsoever on the manner by which the data are acquired in the first place.

The passages cited by the Examiner in the Kuc et al. reference merely refer to various types of manipulations, such as enlargements or repositioning, of images corresponding to, or represented by, data that have already been acquired. These manipulations have nothing to do with the data acquisition itself.

Applicants believe this was already clear from the language of independent claim 1 of the present application as originally filed, however, claim 1 has been editorially amended to make clear that the protocol claimed therein is not a "generic" operating protocol (which might encompass post-processing), but is instead a protocol that is used to actually obtain the magnetic resonance data.

In addition to the fact that acquiring a magnetic field pattern using a SQUID bears no resemblance whatsoever to detecting magnetic resonance signals using a magnetic resonance apparatus, the fundamental difference described above between the subject matter of the present application and the apparatus and method disclosed in the Kuc et al. reference is clearly demarcated by the aforementioned language which has now been added in claim 1.

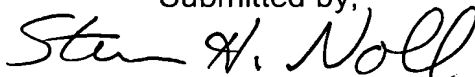
The Kuc et al. reference, therefore, does not disclose all of the method steps of independent claim 1 as arranged and operating in that claim, and therefore does not anticipate claim 1. Claim 2 further defines one of the method steps in the novel method of claim 1, and therefore is not anticipated by the Kuc et al. reference for the same reasons discussed above in connection with claim 1.

The above discussion also pertains to the obviousness rejection of claim 3, based on the teachings of the Kuc et al. reference, further in view of the teachings of Hayes et al. From the above discussion, it should be clear that even if the Kuc et al. reference were (or could be) modified in accordance with the teachings of Hayes et al., a method as set forth in claim 3, which embodies the subject matter of claim 1 therein, still would not result. In the context of this obviousness rejection, moreover, Applicants respectfully submit that the differences and disparities between a magnetic resonance imaging apparatus and an apparatus which detects magnetic fields using SQUIDs is so fundamental that a person of ordinary skill in the field of magnetic resonance imaging would have no reason whatsoever to consult a device employing SQUIDs in order to obtain any useful information relating to the operation of a magnetic resonance imaging apparatus. If a person of ordinary skill in the field of magnetic resonance imaging did have the insight to seek or use information relating to a device employing SQUIDs, this would be an insight supporting patentability, rather than negating patentability.

Therefore, the subject matter of claim 3 would not have been obvious to a person of ordinary skill in the field of magnetic resonance imaging, based on the teachings of Kuc et al. and Hayes et al.

All claims of the application are therefore submitted to be in condition for allowance, and early reconsideration of the application is respectfully requested.

Submitted by,



(Reg. 28,982)

SCHIFF, HARDIN & WAITE

CUSTOMER NO. 26574

Patent Department

6600 Sears Tower

233 South Wacker Drive

Chicago, Illinois 60606

Telephone: 312/258-5790

Attorneys for Applicants.

CH1\ 4046492.1